VERSAPANEL TECHNICAL MANUAL

*= Copies Available on Request

VERSAPANEL IS A CEMENT BONDED PARTICLE BOARD MANUFACTURED TO BS EN 634-1 AND 2.

Versapanel is a cement bonded particle board intended for both internal and external use which has very high levels of performance in the presence of moisture and has high resistance to fire.

Versapanel conforms to the European Standards EN 634-2 for cement bonded particle boards. This specifies the requirements for particle boards bonded with Ordinary Portland Cement (OPC) for use in dry, humid and exterior conditions.

Versapanel also complies with the general requirements as listed in EN634-1 together with the requirements set out in table 1 of this standard.

Composition and Manufacture
Cement bonded particle board generally (but not exclusively) comprises wood particles bonded with ordinary Portland cement. Wood is the predominant component by volume but cement is predominant by weight. Small quantities of chemicals are added to the wet mix, one of their purposes is to accelerate cement setting.

Size
Board sizes generally available are 1220 x 2440mm, 3050 and 3200mm in thickness of 8mm to 40mm. Square edged boards are standard although other edge details are available (see EV2).

Weight
Typical density of boards are 1250 kg/m3 for example a 2440 x 1220 x 12mm board will weigh approximately 45 kilograms.

Appearance
Standard unsanded boards are generally light grey in colour with a smooth cementitious surface.

Worldwide Standards
Versapanel is sold worldwide and has gained acceptance to various country standards by meeting and in many cases exceeding the required performances in applications. Further information is available on request.

Technical assessment papers on Cement Bonded Particle Board are available from the Building Research Establishment (UK). Who have carried out extensive research on the Generic material from 1979.

INTRODUCTION

Versapanel the versatile cement bonded particle board is suitable for a wide range of applications. Cement particle board represents an advantage in building board technology to meet increasingly stringent building regulations and demands for ever higher standards of durability, safety and economy.

Versapanel board contains no hazardous volatiles, it is asbestos free and it's process dust is non-aggressive. It may be sawn, planed, sanded, drilled, routed, nailed and screwed.

Versapanel – the main properties are fire resistance with excellent sound attenuation. It is durable, even when unprotected, and is able to withstand the destructive influences of weather, moisture, insects, vermin and fungi. It is robust against impact, therefore the possibility of damage is reduced. It will not build up static charges. It will also accept a wide variety of finishes.

Versapanel – made from the traditional building materials, cement and wood. The special process of blending results in a board having a unique combination of properties relevant to current needs. Due to the monolithic structure any exposed sawn edges are not vulnerable to weather damage.

Specifications
Finishes – Versapanel board is smooth in texture and light grey in colour. It is available in two types of finish: unsanded and calibrated. Unsanded is suitable for most decorative finishes. Calibrated is normal production, simultaneously sanded on both sides; it is used when a decorative laminate or veneer is to be applied or where minimal thickness tolerance is required.

Edges
Plain, or profiled are available.

- ✓ **Versapanel** is a cement bonded particle board comprising of wood particles and cement.
- ✓ **Versapanel** is a High Performance Panel its principal attributes are: durability, fire resistance, sound reduction, it is resistant to attack from termites, insects and fungus.
- ✓ **Versapanel** is produced in sizes:

  1250 x 2800 1250 x 3050 1220 x 2440 1220 x 3050 1220 x 3200 1250 x 3100

- ✓ **Versapanel** is available in a wide range of thicknesses 8mm - 40mm.
- ✓ **Versapanel** is manufactured either unsanded or calibrated.
- ✓ **Versapanel** is manufactured with a Primer/Sealer factory applied.
- ✓ **Versapanel** is manufactured pre-decorated.
- ✓ **Versapanel** may have a wide range of surface treatments applied.

INTERNAL, EXTERNAL & OTHER APPLICATIONS

Internal

Versapanel board has advantages over other types of board materials due to its strength, workability and durability coupled with the three main attributes: fire resistance, sound reduction and moisture resistance.

Versapanel may be confidently used in wet areas. It has anti-fungal properties and so is ideal for cold storage, food processing and all areas which highlight the importance of hygiene.

Versapanel is first choice for internal walls and partitions in domestic or public buildings due to its impact resistance, fire resistance and sound reduction properties.

External

Versapanel has proven performance as an external cladding material - Versapanel has been successfully used in prefabricated panel construction - both single skin and sandwich application. Also, due to the excellent "racking" properties of Versapanel, the board may be utilised as a structural member in a composite building application.

Versapanel in an untreated state is weather resistant and will not degrade with permanent exposure, even if subjected to freeze/thaw conditions. However, in general, a surface treatment is recommended for external applications. A wide range of paint, tile and textured finishes may be used.

Other Applications

Versapanel can be used for a wide range of applications including as a backing board (carrier panel) to cladding systems such as:

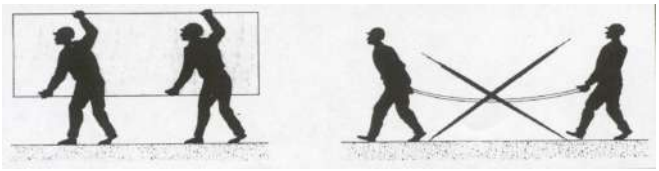
Insulated Render Systems Terracotta Cladding Systems High Performance Cladding Panels
Brick Slip Systems Coating Systems

The benefits of using Versapanel in this type of application is: to help acoustic performance, fire performance, impact performance, pull out performance for approved fasteners, tested for wind loadings, ventilated rainscreen cavity.

SITE PROCEDURE

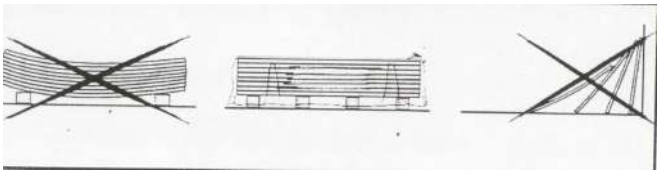
Transport

Versapanel boards are usually delivered secured in plastic bound, edge protected pallets. When loose boards are transported they must be laid flat and fully protected with a waterproof sheet. When manually moving Versapanel it must be carried in a vertical position.



Storage

Verspanel should be stored flat on levelled supports at 800mm centres. It must never be stored on edge or upright. If outside, a protective plastic sheet must be secured to protect from weather.



Conditioning

Versapanel has an ex-works moisture content of 9% + / - 3% and is in equilibrium when the temperature is 20°C with a relative air humidity of 50-60%. Versapanel adapts to the ambient humidity level, therefore to adjust to its working conditions it should be allowed to acclimatise for 24-48 hours prior to fixing.

Product Hazard Information - Health & Safety Statement

FIRE:	Class '0' to BS476
TOXIC GAS:	Nil
HEALTH:	**Skin contact** - classified as non-aggressive dust. **Eye contact** - Normal Treatment for removing foreign bodies from eyes. **Inhalation** - Process dust is non-aggressive, but protection recommended when processing material.

COMPOSITION:	Portland Cement Wood Water Non-toxic chemical neutralising agents
BASE:	Alkaline pH12

For further information in relation to COSHH please contact our technical services 01925 860999.

HEALTH & SAFETY

1. PRODUCT INFORMATION

Trade Name **Versapanel** Generic Name: Cement Bonded Particle Board

Supplier: Versapanel (Pty) Ltd

2. PRODUCT INGREDIENTS

Manufactured from:

Portland Cement | Water | Wood Fibres | Chemical Additives

3. PHYSICAL DATA

Appearance & Odour: Grey Sheet - No Odour

Boiling Point:	NA	% Volatile by volume:	0
Vapour Pressure:	NA	Melting Point:	NA
Water Solubility%:	NA	Specific Gravity:	1.25
Evaporation Rate:	Nil	Density:	1250kg/m^3
Surface pH:	11-13		

4. FIRE & EXPLOSION DATA

Flash Point:	NA
Extinguishing Media:	Foam, Water
Unusual Fire or Explosion Hazard:	None
Special Fire Fighting Procedures:	None
Flammability:	NA

5. FIRST AID MEASURES

Eye Contact: Flush eyes immediately with water or physiological saline for at least 15 minutes, then if necessary remove contact lenses and open eye widely. Seek medical advice if irritation persists.

Skin Contact: Use water to wash skin thoroughly.

Ingestion: Flush mouth and drink plenty of water.

Inhalation: Take person to an area away from product and where they can inhale plenty of fresh air.

If necessary to seek medical advice take this data sheet with you to the doctor or casualty department.

6. TOXICOLOGICAL INFORMATION

Short term effects: Routes:

Eyes - Dust may cause temporary irritation and watering of the eyes.
Lungs - Dust may result in irritation of the respiratory tract.
Ingestion – Mild discomfort.

Long term effects – Prolonged inhalation of high concentrations of the dust may cause respiratory conditions.

7. ACCIDENTAL RELEASE MEASURES

Collect dust with a type H vacuum cleaner that should comply to BS 5415 as a minimum or soak with water and brush up the dust. Restrict spreading and refer to handling procedures. Make sure to use personal safety equipment.

8. PERSONAL PROTECTION

Eyes:	Safety Glasses for dust protection.
Skin:	Protective gloves, normal working overalls.
Inhalation:	Mask with dust type filter P2 , make sure to change filters as necessary.
Work Environment:	The work area should be well ventilated.

9. HANDLING

When drilling or cutting effective emission ventilation should be in place. The use of high speed cutting tools should be avoided unless emission ventilation (dust extraction) is in place.

10. FIRE MEASURES

No special fire precautions are necessary. Fire fighting equipment is not applicable. Hazardous decomposition products – not flammable. Small quantity of carbon monoxide and carbon dioxide.

11. OTHER INFORMATION

Occupational Exposure Standard (OES)
Portland cement OES 10mg/m3 total dust 5mg/m3 respirable dust, 8 hr time weighted averages.
Cellulose OES 10mg/m3 total dust, 5mg/m3 respirable dust, 8 hr time weighted averages.
Soluble Aluminium Salts OES 2mg/m3 total inhalable dust.

Waste Disposal – Treat as construction industry waste.

PROCESSING

MACHINING

Versapanel is machined and processed in the same manner as resin bonded particle boards, but ensuring that tungsten carbide tipped blades are used at all times. Comprehensive tests have shown that wear on tools during the processing of Versapanel is significantly lower when compared with resin bonded board. This is due to the lack of resinification and a lower degree of heating.

SAWING

Equipment

- Cross cut hand saws for thicknesses up to 12mm.
- Jigsaw for thicknesses up to 12mm and small work.
- Portable circular saw.
- Fixed saw for dimensioning (vertical or horizontal).

Type of blade.

- Alternative or trapezoidal teeth.
- Chart shows number of revolutions and number of teeth (Z).

Diameter mm	**250**	**300**	**350**	**400**
Panel thickness up to 12mm	Z=48	Z=60	Z=72	Z=72
Panel thickness exceeding 12mm	Z=36	Z=48	Z=54	Z=60
Number of revolutions rpm	3000/4500	3000	3000	3000/1500

MILLING

Common machines with carbide-tipped tools. The higher the rpm, the better the milled edge.

COUNTERSINKING DRILLING

Versapanel can be drilled using conventional portable drilling machines; high speed steel drills or tungsten carbide drills (for prolonged use) and central tip for precision drilling. Although Versapanel is a wood and cement panel it is not concrete and therefore does not require percussion drilling The drilling speeds are the same as for chip-board panels (3000/4000 rpm).

SANDING

Versapanel can be sanded using a vibrating sanding machine or belt sanding machine. Belts should be 40-80 grains; open coat structure with linear speed of 20 to 28 m/sec. When working in confined areas dust extraction equipment is recommended.

SANDING

Hand-hold Orbital Sander, Hand-held Belt Sander. When used indoors, use vacuum dust extractor.

Edging Detail
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EDGING, JOINTING AND GENERAL FIXING DETAILS

Versapanel can be effected by slight dimensional changes, according to variation in relative humidity.

If the panel is unprotected or a surface treatment is used which allows the panel to be subjected to the varying effects of relative humidity, then the fixings and in particular the joints between the panels must allow for movement.

Versapanel has been extensively tested in a wide range of climate and humidity variations and has performed to the highest possible level where joint free surfaces are required whether it be for internal or external applications.

APPLICATION EXAMPLE

The following application example refers to the use of flexible surface treatments for internal or external application, whether the surface treatment be water based or solvent based. Before fixing Versapanel, the location of all battens must be carefully checked for accurate location. Versapanel will be nailed through to regularised softwood battens prefixed to the timber frame panel, with the board held tight to the batten at point of fixing to avoid break-out. The battens should be drilled or grooved to allow the cavity to be ventilated. Fixing nails should be ITW Paslode ring shank nails, selected from the following table of pullout resistances:

	35mm Length	**45mm Length**
2.2mm Diameter	125N	216N
2.5mm Diameter	180N	243N

Nailing can be manual or pneumatic. Pneumatic tools should be set to 5-6 bars, then finely, adjusted using test pieces to achieve the required penetration. The perimeter ring fixings will be at 200mm centres, min 15mm from the board edge to min 38 x 25mm battens (35mm nails) or min 38 x 32mm battens (45mm nails). The central vertical fixings will be at 300mm centres, to min 38 x 25mm battens (35mm nails) or min 38 x 32 battens (45mm nails). Board junctions within a panel will be butt-jointed with a space not less than 2mm nor greater than 3mm between boards, with fixings at 200mm centres, min 15mm from the board edge, to min 50 x 25mm battens (35mm nails) or min 50 x 32mm battens (45mm nails). All nail heads must finish not less than 2mm nor greater than 4mm below the board surface. Note that regular checks are required to allow for minor variations in density of the board. There must be no step between the outer plane of the boards at joints in excess of 2mm. Any damaged or broken boards must be replaced. No small infill pieces should be used. No oil based marker pens are to be used on the surface of the board.

Edging Detail

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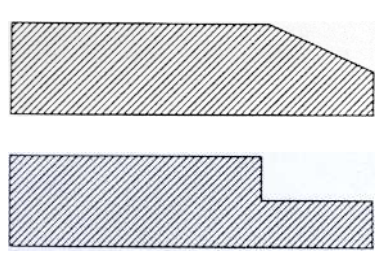
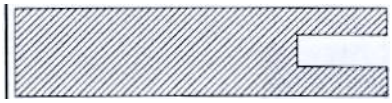
EDGING & JOINTING DETAIL

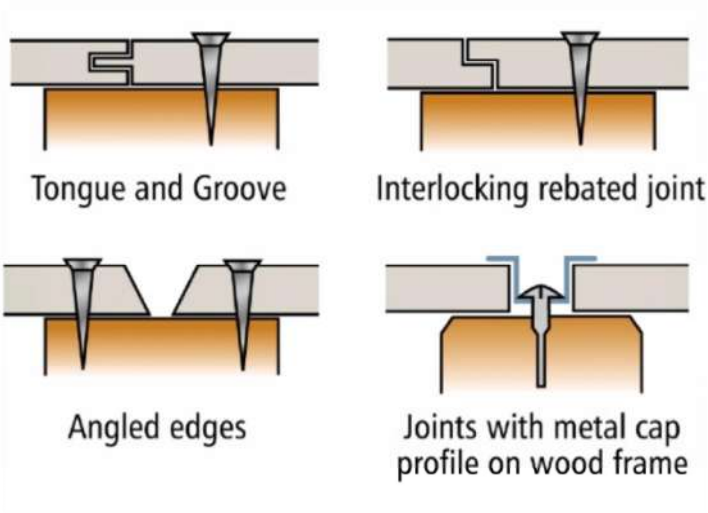


Minimum 12mm



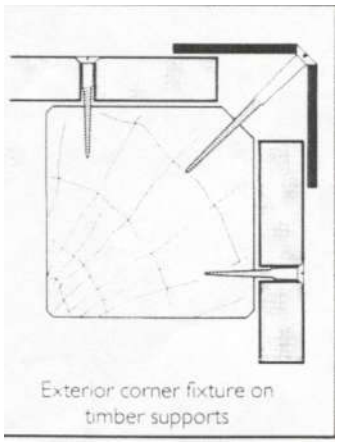
Minimum thickness: 16 mm

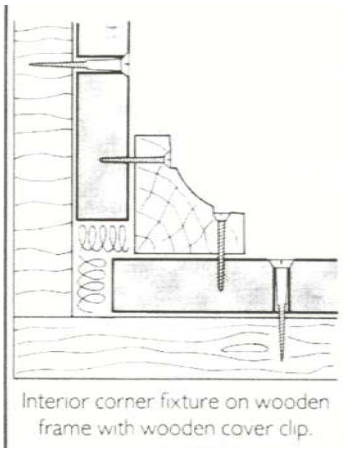
Thickness: 18 mm

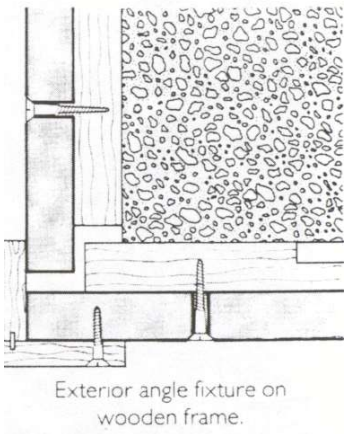


Note:
Where Versapanel is used on an application where the product is not sealed but can be exposed to temperature changes in relative humidity, then screw holes should be oversized and a gap which allows movement should be used at joints.

Examples showing 3 corner joints.





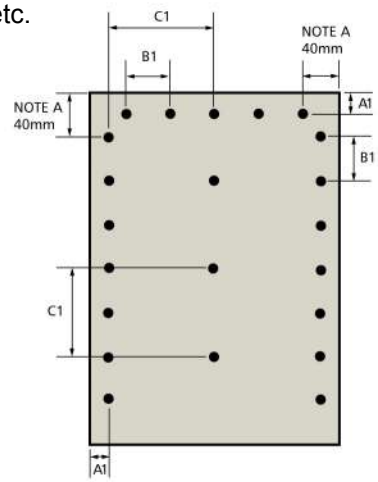


MOUNTING & FIXING

MOUNTING

Versapanel can be fixed using nails, screws or staples and is also suitable for manual, pneumatic and powdered fixing methods. The following table is a guide to fixing distances for most common applications, however, the details are not sufficient when Versapanel is to be subjected to particular structural forces such as wind suction or loading on ceiling soffits etc.

In such cases further advice should be obtained.



NOTE A - The first fixing in from the corner for both horizontal and vertical fixing must be 40mm in from edge

Fixing Distances

Board Thickness	Centres mm			
mm	A	A1	B1	C1
8 - 12	40	20	200	400
16 - 20	40	25	300	600
22 +	40	30	400	600

FIXING

SCREWING

Type of screw:
Countersunk screws designed for particle boards in stainless steel or galvanized, preferably self tapping screws with central tip adapted to the type of substrate. -diameter: 3.5 to 4.2 mm
-length: 2.5 to 3 times the panel thickness.

Fixing Technique:
-manually with pre-drilling
-pre-drilling is not necessary when using a pneumatic screw driving machine and central tip screws, preferably screws with a self tapping head
-screws must be positioned as shown in the table above
-on external application screw heads should be covered to avoid rust formation -use self-tapping screws for a metal frame structure with thicknesses exceeding 7.5/10mm
-screwing in edges is possible with 16mm (minimum) panels and pre-drilled holes

NAILS

Type of nail:
-flat-headed, galvanized stainless steel, twisted or sheradized serrated.
-diameter: 2.2 to 3.1 mm.
-length: 3 to 3.5 times the panel thickness

Fixing Techniques:
-for thicknesses up to 12mm nailing can be manual, but pre-drill an 0.8 x diameter hole. -exceeding 12mm use pneumatic tools set to 5-6 bars with tape loader or nail roll, or pre-drill pilot hole.
-avoid tapping the panel with hammer.
-keep panel steadily positioned on the background structure whilst nailing.

Important note:
Versapanel can be affected by slight dimensional changes according to variation in relative humidity. If the panel is unprotected or a surface treatment is used which allows the panel to be subjected to the varying effects of relative humidity, then the fixings and in particular the joints between the panels must allow for movement. Eg: oversize the screw hole and leave a 2/3mm gap at the joint.

MOUNTING & FIXING

SPECIFIC FIXING METHODS

a) Cordless nail gun into timber

The use of a cordless nail gun enables the rapid fixing of Versapanel to timber frame or battens. The advantage of this method is the speed of erection time and the subsequent cost reduction.

To fix 8mm to 22mm boards for internal and external applications a 51mm x 2.8mm annular ringed nails with sheradized coating to BS 492 should be used.

The variable power setting on the tool can provide either a flush finish with the board surface where visible fixing is acceptable or where a high build surface coating is to be applied, or a countersunk nail head where filling and painting are desired.

b) **Cartridge nail gun**

Versapanel can be fixed into steel framing or structure, concrete, brickwork or concrete blockwork using cartridge fixing tools.

Fixing method can be direct to substrate, or where irregular surfaces are encountered, via battens applied prior to panels.

METHOD -Screw fixing

Versapanel can be screw fixed to various support systems including timber battens or framing, metal studwork or structure and by either manual or power methods.

BONDING

Only alkali resistant adhesives should be used, suitable for Versapanel pH value of 11-13.
For high-quality bonding, Versapanel with calibrated surfaces are most suitable.
For adhesive bonding by means of hot pressing, a board moisture content of no more than 6% -9% is required but this should be determined with the adhesive manufacturer. When bonding to one face of Versapanel the reverse should always be counterbalanced. For large-area adhesive bonding, some pre-testing should always be carried out in cooperation with the adhesive manufacturer.

Applications and Types of Adhesives

When the walls of a room are to be completely covered with ceramic tiles (e.g. laboratories and sanitary facilities) the back of the Versapanel must also be primed/sealed. Without sealing the back of the boards, moisture can penetrate the board, which can result in distortion. Distortion can also take place when the back of the board dries out on one side only. For adhesive bonding to free floating floors Versapanel primed on both sides should be used, to avoid one-sided penetration of moisture which could lead to distortion. Boards with a calibrated surface can easily absorb moisture.

Full Surface Bonding of Versapanel to Each Other

Dry Rooms: Dispersion adhesive or one component reaction resin adhesives.
Wet Rooms: Double component resin adhesive polyurethane based or epoxy resin adhesive.

Bonding of Tongue & Grooved Edges

PUD 4 one pack polyurethane adhesive as supplied by Versapanel (Pty) Ltd is recommended for this application for wet or dry environments.

Full Surface Bonding of Laminates and Veneers

Versapanel is an excellent substrate for the application of decorative laminates and veneers. The sanded/calibrated finish should always be used, when bonding a decorative surface to one face the reverse of the panel must have a compensator layer applied. With timber veneers a cross band veneer is usually required.

In all instances the above operations should be carried out by experienced companies specialising in bonding techniques using the input from adhesive manufacturers for bonding to cement board material.

Note

Always consult adhesive manufacturer and laminate manufacturer for technical assistance on suitability of use. Always test a small sample of the materials before application.

TECHNICAL DATA

Product Range

Panel Type: unsanded
calibrated

Standard Sizes 2440 x 1220mm Thicknesses:
3050 x 1220mm Unsanded: 8 10 12 16 19 22 25 28 32 40mm

Non Standard Sizes 2600 x 1250mm Calibrated: 8 10 12 16 19 22 25 28 40mm
3050 x 1250mm
3200 x 1220mm*
3200 x 1250mm*

Special sizes of panel and thicknesses are available on request.

Density (average)	1250Kg/m3	Surface Alkalinity	pH between 11 and 13
Modulus of Elasticity	4500N/mm2	Moisture Content (ex production)	9% ± 3% by weight
1. Thickness tolerances Calibrated: Unsanded:	 8-37mm±0.3mm 6-10mm±0.7mm	Thickness Swelling (24hrs immersion)	0.7% (average)
	12-19mm±1.0mm 22-42mm±1.5mm	Dimensional Stability	0.11% for an increase in relative humidity from 65% to 90% 0.16% for an increase in relative humidity from 65% to saturation
2. Length: 3. Width: 4. Squareness:	±5mm ±5mm -2.5mm on panel diagonal difference		
Bending Strength (min)	9N/mm2	Water Vapour Permeability	0.00197 g/m.h.mm.hg
Permissible design value	2.25 N/mm2	Thermal Conductivity Coefficient	0.26.W/m.k.
Tensile strength (parallel to surface)	4.0N/mm2	Sound Insulation	See characterisitics guide Also acoustic information
Tensile strength (perpendicular to surface)	0.5Nmm2	Fire Rating	Tested to BS 476 Part6.7 - classified as Class 0 building board with a Class 1 surface spread of flame.
Compression strength (min)	15 N/mm2		
Bonding Agent	Versapanel is odourless, Since the bonding agent is free from formaldehyde.	For further information see Fire Information.	

EV 11

Versapanel Characteristics

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VERSAPANEL CHARACTERISTICS

		Unsanded and Calibrated Only											Calibrated Only	
Thickness of board in mm		8	10	12	14	16	18	20	22	24	28	30	36	40
Approx. kg per square metre		10	12.5	15	17.5	20	22.5	25	27.5	30	33	32.5	45	50
Airbourne sound reduction for single board in dB		30	31	31	32	33	33	34	34	35	36	36	37	38
Manual nailing without pre-drilled holes		☻	☻	☻	☻									
Manual screwing with pre-drilled holes		☻	☻	☻	☻	☻	☻	☻	☻	☻	☻	☻	☻	☻
Power screwing & nailing without pre-drilled holes		☻	☻	☻	☻	☻	☻	☻	☻	☻	☻	☻	☻	☻
Nailing and screwing into edges						☻	☻	☻	☻	☻	☻	☻	☻	☻
Edge Profling	Rebated				☻	☻	☻	☻	☻	☻	☻	☻	☻	☻
	Grooved for inserted tongue				☻	☻	☻	☻	☻	☻	☻	☻	☻	☻
	Tongue & Grooved					☻	☻	☻	☻	☻	☻	☻	☻	☻
General internal linings & ext. claddings	Studs at 400mm centres	☻	☻	☻	☻									
	Studs at 500mm centres					☻	☻	☻	☻					
	Studs at 600mm centres					☻	☻	☻	☻	☻	☻	☻	☻	☻
Ceilings and soffits	Joists at 400mm centres	☻	☻	☻	☻									
	Joists at 600mm centres			☻	☻	☻	☻	☻	☻	☻	☻	☻	☻	☻

Approximate Number of Boards Per Pallet

(subject to variation)

Board Size	No. of Boards
8mm	54
10mm	43
12mm	36
16mm	26
19mm	24
22mm	20
25mm	17
28mm	16
32mm	13
40mm	11

FIRE PERFORMANCES

As a single board material Verspananel is probably one of the most versatile flat sheet materials available when it comes to application in areas which have to be fire rated.

Versapanels wide range of thicknesses combined with its unique quantities of :

Resistance to moisture
Resistance to impact
High acoustic performance
For use internally or externally
Smooth surfaces
Making it a very cost effective solution for fire protection.

Versapanel has been extensively tested- in accordance with BS 476 which is the fire test relevant to building materials and structures.

FIRE PROPAGATION. PART 6: 1981

This test measures the amount and rate of heat evolved by the material while subjected to standard heating conditions. Test results are given as an index of performance (1) which is based on three sub-indices (i_l 'i_2'i_3). The higher the value of the index of performance, 1, the greater is the materials contribution to fire growth. The higher the value of sub-index, i_l the greater the ease of ignition and flame spread.

SURFACE SPREAD OF FLAME - PART 7 : 1971

This test groups materials into class 1 to 4 in descending order of performance according to the rate at which flame spreads over their surface under standard heating conditions.

VERSAPANEL IS CLASS '0'

Class 'O' is not a classification identified in a British Standard test. Class 'O' is defined in Approved Document B2/3/4 as follows:

a) composed throughout of materials of limited combustibility, or

b) a Class 1 material which has a fire propagation index (1) of not more than 12, and a sub-index (i_1) of not more than 6.

Some Typical Examples Showing CP Board in Various Applications

Steel Stud

12mm	Insulation to cavity	30 minutes
12mm	Insulation to cavity	60 minutes
16mm	Insulation to cavity	120 minutes

Timber Stud

10mm	Insulation to cavity	30 minutes
12mm and 16mm	Insulation to cavity	60 minutes
12mm	Insulation to cavity	120 minutes

Load bearing Construction

8mm	Composite construction	60 minutes

ACOUSTIC INSULATION

Versapanel has a minimum density of 1250k per M3 and therefore have superior acoustic performances when used in various elements of construction: walls, floors or ceilings.

With today's environmental considerations, protection against noise is an important criteria in the design of modern construction. Whether used in conventional construction or in component manufacture Versapanel increases substantially the mass of the overall system.

Versapanel has been used extensively in a wide range of constructions where acoustic control is one of the important performance criteria.

* Internal linings *to* existing constructions to increase mass *

* Underlining to roofs in high risk noise areas -airports, etc -both in single sheet and sandwich construction *

* As one or both faces to factory finished bonded composite panels for various cladding systems *

* High performance ceiling and flooring systems *

* External sound barriers for motorways and airports *

* Soundproofing of doors, new or upgrading -application can be to one or both sides *

* Versapanel is flat and smooth and can be used in acoustic baffles in theatres, concert halls and recording studios where true sound reverberation is required *

Versapanel acoustic performance based on minimum density of 1250k M3 by thickness

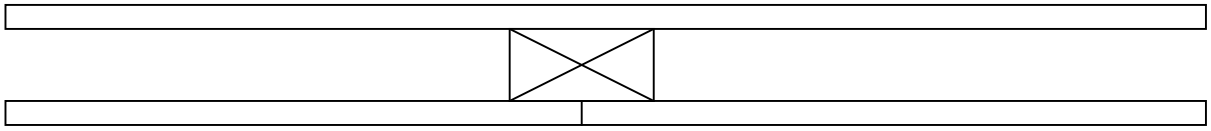
Thickness	Weight per m2 Kilos	Weighted Acoustic Insulation Value Kw dB
8	10	30
10	13	31
12	15	31
16	20	33
19	24	33
22	28	34
25	31	35
28	35	36
32	40	37
40	50	38

ACOUSTIC INSULATION

Typical examples using Versapanel in varying thicknesses in wall, floor and ceiling constructions. The performance figures given are the theoretical value, it is to be noted that it is possible to achieve these figures providing site work is carried out correctly.

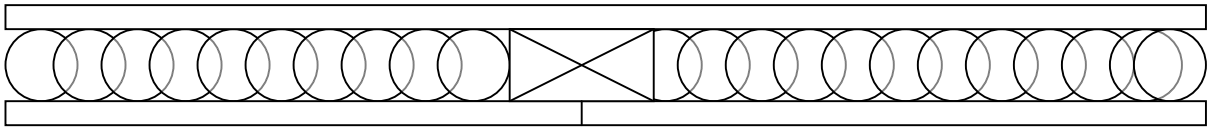
Partition Construction - Basic Details

Timber Stud - No Insulation To Cavity



Thickness of Partition	Thickness of Versapanel To Both Sides	Performance (dB)
95mm	10mm	40
99mm	12mm	43
107mm	16mm	45
115mm	10mm	42
119mm	12mm	45

Timber Stud - Insulation To Cavity



Insulation RWA 45 - 75mm *RWA 45 - 100mm

Thickness of Partition	Thickness of Versapanel To Both Sides	Performance (dB)
95mm	10mm	46
99mm	12mm	49
107mm	16mm	53
*115mm	10mm	49
*119mm	12mm	52
*127mm	16mm	55

Note: When using steel stud the dB values of the partitions are at least the same and in many cases can be 1 to 2 dB better than timber frame.

VERSAFLOOR SYSTEMS
FACTORY FINISHED HIGH PERFORMANCE FLOORING SYSTEMS

The construction industry now requires as many components as possible to be supplied in a finished form, minimising any further work on site. This particularly applies to the Modular and Volumetric construction industry where modules are of a repetitive sizing for such constructions as:

Prisons ***Hospitals*** ***Restaurants***
Petrol Stations **Hotels**

Versapanel (Pty)Ltd have developed for this market Versafloor factory finished high performance flooring systems. Versafloor is manufactured using Versapanel cement bonded particle board which is a high performance building material having the properties of fire resistance, moisture resistance and high acoustic performance.

FINISHED SPECIFICATION
Thickness of floor = 18mm - 20mm - 22mm - 25mm - 28mm – 30mm.

Versafloor is available to the following specifications:

Type 001
Unsanded Versafloor can be supplied with the standard unsanded finish with square edge or tongue and groove applied to two or four edges. Care must be taken when using this specification as there will be a thickness tolerance of up to + - 1.5mm.

Note: This range can also be supplied with a factory applied grey primer/sealer to both faces.

Type 002
Calibrated Versafloor has been factory calibrated and all thickness' have a thickness tolerance of + - 0.3mm. This range can also be supplied square edge or with tongue and groove applied to two or four edges. This product range is suitable for application of fine thickness overlays such as vinyl flooring and thin carpet tiles.

Type 003
Prime/Seal Versafloor that has been factory calibrated and then has a factory applied primer/sealer to reduce uptake of moisture when used in damp or wet conditions, the thickness tolerance is + - 0.5mm. The top surface is white and the bottom surface is grey, the application of this primer/sealer can prevent up to 80% of moisture uptake. This range can also be supplied square edge or with tongue and groove applied to two or four edges.

Type 004
Rustic Versafloor has been produced with an integral colour (coloured in the mass). The range is anthracite, brick red or amber and can be supplied with or without tongue and groove. Panel sizes are normally 625 x 1250mm laid size. The board must be treated on site with a hard-wearing clear coating to both faces which is suitable for flooring applications.

VERSAFLOOR SYSTEMS (CONTINUED)
THE FACTORY FINISHED HIGH PERFORMANCE FLOORING SYSTEMS

Tongue & Groove
Where a tongue and groove is applied it will be in the centre of the panel.

Panel Sizes
Versafloor panel sizes will be produced to suit client requirements and layouts but standard stock sizes will be the laid size of 2400 x 1200mm.

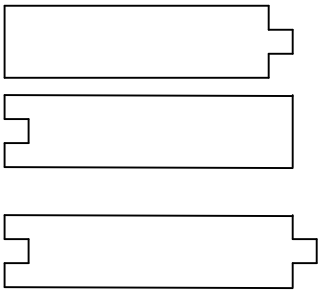
Versafloor can also be produced in 'kit of part' supply to minimise on site cutting and wastage and can be supplied in the following panel types:

PANEL TYPE

PT

PG

GT



Above illustration not to scale.

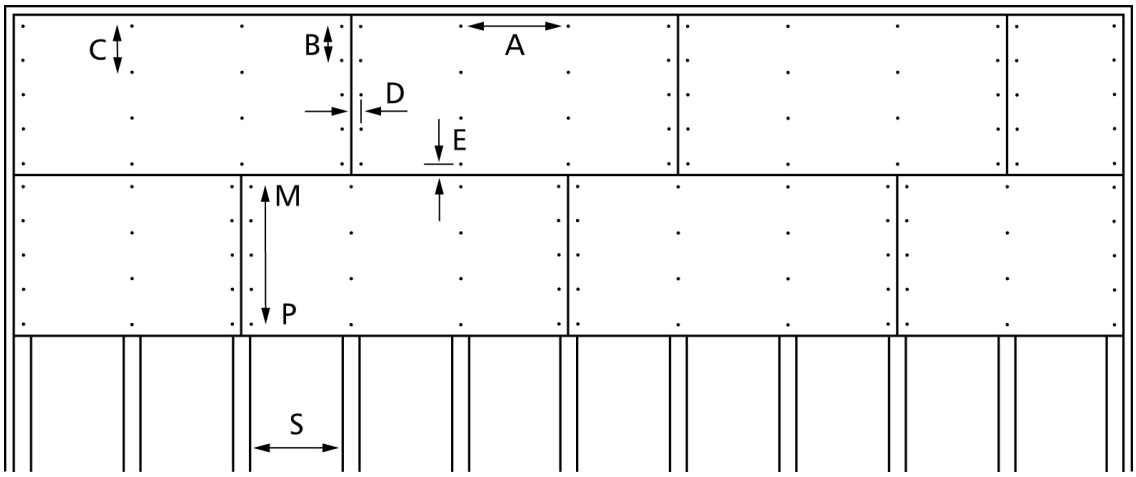
Tiling to Versafloor
When tiling to Versafloor the Type 003 Prime/Seal specification must always be used with tongue and groove to all four edges and laid in accordance with the BS 5385-3 1989. Tile adhesive systems should be tested for compatibility and expansion joints incorporated in accordance with the BS 5385-3 1989.

Fixing Versafloor
Self-drilling, self-countersinking screws should always be used for fixing to steel or timber support structure. No mechanical fixings should be used for floating floor applications. All edges of the Versafloor must be bonded using a moisture resistant, fire resistant adhesive - for this application we advise the use of Versapanel (Pty) Ltd T&G Adhesive.

Floating & Acoustic Floor Applications
Versafloor for acoustic flooring both as a working deck or finished floor will increase mass with fire rated performance.

Versafloor can be used with high-density mineral insulation or with the Versapanel (Pty) Ltd Versalayer for performance applications in accordance with Document E to the building regulations - for further information please contact Sales Department at Versapanel (Pty) Ltd.

VERSAFLOOR SYSTEMS (CONTINUED)
LAYING OF SYSTEM - TYPICAL LAYOUT ALSO SHOWING CENTRES OF MECHANICAL FIXINGS



Fixing Centres

S = Support Centres

A = 400 or 600mm dependant on centres of support

B = 300mm

C = 400mm

D = 25mm

E = 50mm

ALL Tongue & Grooved edges to be bonded
ALL Tongue & Grooved or square edges should be bonded with moisture resistant & fire resistant adhesive (see technical specification on adhesives).

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FLOORING ADMITTED LOAD CHARTS

The following loading charts have been calculated using the physical data as listed, these are the performance requirements of the BSEN 634 part 2. Versapanel's actual performances against BSEN 634 part 2 can be considered as superior.

8mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	2.0	1.8	1.1	2.6	-	2.1	300	0.1	-	-	0.1	-	-
400	1.1	0.8	0.5	1.4	-	0.9	400	0.1	-	-	0.1	-	-
500	0.7	0.4	0.2	0.9	0.7	0.4	500	0.1	-	0.1	0.1	-	-
600	0.4	0.2	0.1	0.6	0.4	0.3	600	0.1	-	0.1	0.1	-	-
700	0.3	0.1	0.1	0.4	0.3	0.2	700	0.1	-	0.05	0.1	-	-
800	0.2	0.1	0.1	0.3	0.2	0.1	800	0.1	-	0.04	0.1	-	-
900	0.1	0.1	0.04	0.2	0.1	0.1	900	0.1	-	0.04	0.1	-	-
1000	0.1	0.05	0.03	0.1	0.1	0.1	1000	0.1	0.1	0.03	0.1	-	-

10mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	3.2	-	2.1	4.0	-	4.0	300	0.1	-	-	0.2	-	-
400	1.8	1.5	0.9	2.2	-	1.7	400	0.1	-	-	0.2	-	-
500	1.1	0.8	0.5	1.4	-	0.9	500	0.1	-	-	0.2	-	-
600	0.7	0.4	0.3	0.9	0.8	0.5	600	0.1	-	-	0.2	-	-
700	0.5	0.3	0.2	0.6	0.5	0.3	700	0.1	-	0.1-	0.2	-	-
800	0.3	0.2	0.1	0.5	0.4	0.2	800	0.1	-	-0.1	0.2	-	-
900	0.2	0.1	0.1	0.3	0.2	0.1	900	0.1	-	-0.1	0.1	-	-
1000	0.2	0.1	0.1	0.3	0.2	0.1	1000	0.1	-	-0.1	0.1	-	-

12mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	4.7	-	3.7	5.9	-	-	300	0.2	-	-	0.3	-	-
400	2.6	-	1.6	3.2	-	2.9	400	0.2	-	-	0.3	-	-
500	1.6	1.3	0.8	2.0	-	1.5	500	0.2	-	-	0.3	-	-
600	1.1	0.8	0.5	1.4	-	0.9	600	0.1	-	-	0.1	-	-
700	0.7	0.5	0.3	1.0	0.9	0.5	700	0.1	-	-	0.2	-	-
800	0.5	0.3	0.2	0.7	0.6	0.4	800	0.1	-	0.1	0.2	-	-
900	0.4	0.2	0.1	0.5	0.4	0.3	900	0.1	-	0.1	0.2	-	-
1000	0.3	0.2	0.1	0.4	0.3	0.2	1000	0.1	-	0.1	0.2	-	-

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14mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	6.4	-	5.9	8.0	-	-	300	0.3	-	-	0.4	-	-
400	3.5	-	2.5	4.4	-	-	400	0.2	-	-	0.4	-	-
500	2.2	2.1	1.3	2.8	-	2.4	500	0.2	-	-	0.3	-	-
600	1.5	1.2	0.7	1.9	-	1.4	600	0.2	-	-	0.3	-	-
700	1.0	0.8	0.5	1.3	-	0.9	700	0.2	-	-	0.3	-	-
800	0.7	0.5	0.3	1.0	1.0	0.6	800	0.2	-	-	0.3	-	-
900	0.6	0.4	0.2	0.7	0.7	0.4	900	0.2	-	-	0.3	-	-
1000	0.4	0.3	0.2	0.6	0.5	0.3	1000	0.2	-	0.2	0.3	-	-

16mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	8.3	-	-	10.5	-	-	300	0.3	-	-	0.5	-	-
400	4.6	-	3.7	5.8	-	-	400	0.3	-	-	0.5	-	-
500	2.9	-	1.9	3.6	-	3.6	500	0.3	-	-	0.4	-	-
600	1.9	1.8	1.1	2.5	-	2.1	600	0.3	-	-	0.4	-	-
700	1.4	1.1	0.7	1.8	-	1.3	700	0.3	-	-	0.4	-	-
800	1.0	0.8	0.5	1.3	-	0.9	800	0.2	-	-	0.4	-	-
900	0.8	0.5	0.3	1.0	-	0.6	900	0.2	-	-	0.4	-	-
1000	0.6	0.4	0.2	0.8	0.7	0.4	1000	0.2	-	-	0.4	-	-

18mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	10.6	-	-	13.3	-	-	300	0.4	-	-	0.7	-	-
400	5.9	-	5.2	7.4	-	-	400	0.4	-	-	0.6	-	-
500	3.7	-	2.7	4.6	-	-	500	0.4	-	-	0.6	-	-
600	2.5	-	1.6	3.2	-	2.9	600	0.3	-	-	0.5	-	-
700	1.8	1.6	1.0	2.3	-	1.9	700	0.3	-	-	0.5	-	-
800	1.3	1.1	0.7	1.7	-	1.2	800	0.3	-	-	0.5	-	-
900	1.0	0.8	0.5	1.3	-	0.9	900	0.3	-	-	0.5	-	-
1000	0.8	0.6	0.3	1.0	-	0.6	1000	0.3	-	-	0.5	-	-

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19mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	11.8	-	-	14.8	-	-	300	0.5	-	-	0.7	-	-
400	6.5	-	6.2	8.2	-	-	400	0.4	-	-	0.7	-	-
500	4.1	-	3.2	5.2	-	-	500	0.4	-	-	0.6	-	-
600	2.8	-	1.8	3.5	-	3.5	600	0.4	-	-	0.6	-	-
700	2.0	1.9	1.2	2.5	-	2.2	700	0.4	-	-	0.6	-	-
800	1.5	1.3	0.8	1.9	-	1.5	800	0.3	-	-	0.6	-	-
900	1.1	0.9	0.5	1.4	-	1.0	900	0.3	-	-	0.5	-	-
1000	0.9	0.7	0.4	1.1	-	0.7	1000	0.3	-	-	0.5	-	-

20mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	13.1	-	-	16.4	-	-	300	0.5	-	-	0.8	-	-
400	7.3	-	7.2	9.1	-	-	400	0.5	-	-	0.8	-	-
500	4.6	-	3.7	5.8	-	-	500	0.4	-	-	0.7	-	-
600	3.1	-	2.1	3.9	-	-	600	0.4	-	-	0.7	-	-
700	2.2	-	1.3	2.8	-	2.5	700	0.4	-	-	0.6	-	-
800	1.6	1.5	0.9	2.1	-	1.7	800	0.4	-	-	0.6	-	-
900	1.2	1.1	0.6	1.6	-	1.2	900	0.4	-	-	0.6	-	-
1000	1.0	0.8	0.5	1.3	-	0.9	1000	0.4	-	-	0.6	-	-

22mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	15.9	-	-	19.9	-	-	300	0.6	-	-	1.0	-	-
400	8.8	-	-	11.1	-	-	400	0.6	-	-	0.9	-	-
500	5.5	-	4.9	7.0	-	-	500	0.5	-	-	0.8	-	-
600	3.8	-	2.8	4.8	-	-	600	0.5	-	-	0.8	-	-
700	2.7	-	1.8	3.4	-	3.4	700	0.5	-	-	0.8	-	-
800	2.0	2.0	1.2	2.6	-	2.3	800	0.5	-	-	0.7	-	-
900	1.5	1.4	0.8	2.0	-	1.6	900	0.4	-	-	0.7	-	-
1000	1.2	1.0	0.6	1.5	-	1.2	1000	0.4	-	-	0.7	-	-

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24mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	18.9	-	-	23.7	-	-	300	0.7	-	-	1.2	-	-
400	10.5	-	-	13.2	-	-	400	0.7	-	-	1.1	-	-
500	6.6	-	6.4	8.3	-	-	500	0.6	-	-	1.0	-	-
600	4.5	-	3.7	5.7	-	-	600	0.6	-	-	1.0	-	-
700	3.2		2.3	4.1	-	-	700	0.6	-	-	0.9	-	-
800	2.4	-	1.6	3.1	-	2.9	800	0.6	-	-	0.9	-	-
900	1.8	1.8	1.1	2.4	-	2.1	900	0.5	-	-	0.9	-	-
1000	1.4	1.3	0.8	1.9	-	1.5	1000	0.5	-	-	0.8	-	-

25mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	20.5	-	-	25.7	-	-	300	0.8	-	-	1.3	-	-
400	11.4	-	-	14.3	-	-	400	0.7	-	-	1.2	-	-
500	7.2	-	-	9.1	-	-	500	0.7	-	-	1.1	-	-
600	4.9	-	4.2	6.2	-	-	600	0.6	-	-	1.0	-	-
700	3.5	-	2.6	4.5	-	-	700	0.6	-	-	1.0	-	-
800	2.6	-	1.8	3.4	-	3.3	800	0.6	-	-	1.0	-	-
900	2.0	-	1.2	2.6	-	2.3	900	0.6	-	-	0.9	-	-
1000	1.6	1.5	0.9	2.0	-	1.7	1000	0.6	-	-	0.9	-	-

28mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	25.8	-	-	32.3	-	-	300	1.0	-	-	1.6	-	-
400	14.4	-	-	18.0	-	-	400	0.9	-	-	1.5	-	-
500	9.1	-	-	11.4	-	-	500	0.9	-	-	1.4	-	-
600	6.2	-	5.9	7.8	-	-	600	0.8	-	-	1.3	-	-
700	4.5	-	3.7	5.7	-	-	700	0.8	-	-	1.2	-	-
800	3.3	-	2.5	4.3	-	-	800	0.8	-	-	1.2	-	-
900	2.6	-	1.7	3.3	-	3.3	900	0.7	-	-	1.2	-	-
1000	2.0	-	1.3	2.6	-	2.4	1000	0.7	-	-	1.1	-	-

Versapanel For Flooring

ISSUE 1 - APPROVED MARCH 2004

32mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	33.7	-	-	38.4	-	-	300	1.3	-	-	2.1	-	-
400	18.8	-	-	23.6	-	-	400	1.2	-	-	1.9	-	-
500	11.9	-	-	15.0	-	-	500	1.1	-	-	1.8	-	-
600	8.1	-	-	10.3	-	-	600	1.1	-	-	1.7	-	-
700	5.9	-	5.5	7.4	-	-	700	1.0	-	-	1.6	-	-
800	4.4	-	3.7	5.6	-	-	800	1.0	-	-	1.6	-	-
900	3.4	-	2.6	4.3	-	-	900	1.0	-	-	1.5	-	-
1000	2.7	-	1.9	3.4	-	-	1000	0.9	-	-	1.5	-	-

36mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/5-00
300	42.8	-	-	43.2	-	-	300	1.7	-	-	2.7	-	-
400	23.9	-	-	29.9	-	-	400	1.5	-	-	2.4	-	-
500	15.1	-	-	19.0	-	-	500	1.4	-	-	2.3	-	-
600	10.4	-	-	13.1	-	-	600	1.3	-	-	2.2	-	-
700	7.5	-	-	9.5	-	-	700	1.3	-	-	2.1	-	-
800	5.6	-	5.2	7.2	-	-	800	1.2	-	-	2.0	-	-
900	4.4	-	3.7	5.6	-	-	900	1.2	-	-	1.9	-	-
1000	3.4	-	2.7	4.4	-	-	1000	1.2	-	-	1.9	-	-

40mm VERSAPANEL

CEMENT PARTICLE BOARD

Uniformly distributed load (kN/m2)							Concentrated load (kN on 50mm x 50mm square)						
Span (mm)	Single Span			Continuous			Span (mm)	Single Span			Continuous		
	Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection			Load limited by stress	Load limited by deflection		Load limited by stress	Load limited by deflection	
		Span/300	Span/500		Span/300	Span/500			Span/300	Span/500		Span/300	Span/500
300	52.8	-	-	48.0	-	-	300	2.1	-	-	3.3	-	-
400	29.5	-	-	36.0	-	-	400	1.9	-	-	3.0	-	-
500	18.7	-	-	23.5	-	-	500	1.8	-	-	2.8	-	-
600	12.8	-	-	16.2	-	-	600	1.7	-	-	2.7	-	-
700	9.3	-	-	11.8	-	-	700	1.6	-	-	2.5	-	-
800	7.0	-	-	8.9	-	-	800	1.5	-	-	2.5	-	-
900	5.4	-	5.1	6.9	-	-	900	1.5	-	-	2.4	-	-
1000	4.3	-	3.7	5.5	-	-	1000	1.4	-	-	2.3	-	-

EV16

Versapanel For Ceilings

ISSUE 1 - APPROVED MARCH 2004

VERSAPANEL FOR CEILINGS

Although Versapanel has not generally been regarded as a ceiling material many prestigious contracts have been carried out using this material for a variety of different reasons, combining the properties of Versapanel to provide a high performance ceiling construction.

Class '0' fire resistance* *Moisture resistance
Easily machined to produce profiles
Can be used in grid or demountable system
*** Acoustic performance ***
Wide range of surface finishes
***Flexibility in design ***

Moulded Panels

Versapanel can be machined to create a fielded effect or have mouldings in hard or soft wood applied to the surface.

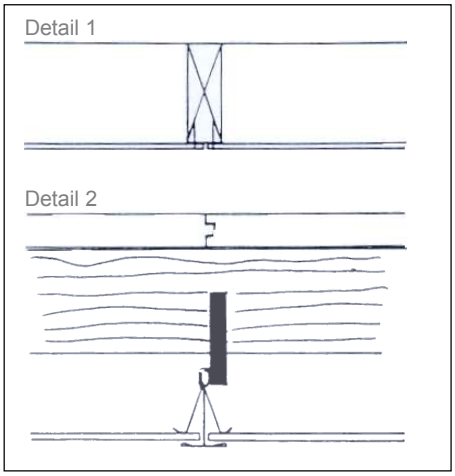
Ceiling Grid

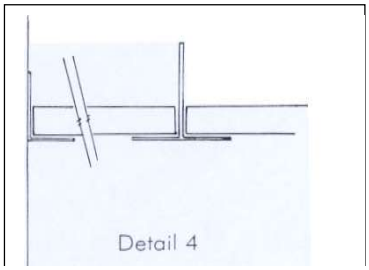
Versapanel can be supplied cut to size, bevel or square edged, and with a variety of surface treatments. Form emulsion, veneered, laminated etc.

Specific High Performance Systems

Versapanel ceiling systems are used where there is a requirement for a high performance against any of the following criteria: Fire-moisture/Humidity/-Acoustics-Impact contamination. Versapanel is also available in standard sizes of 600 x 600mm or 1200 x 600mm. Available with square edge (for lay-in grid system) or bevelled edge (for face fixing) they offer a class '0' fire resistance with a class '1' spread of flame to BS4 76 part 7. The density of Versapanel offers excellent airborne sound reduction (31 dB for a single tile of 1Omm). The tiles can be supplied pre-decorated or with an ex-works smooth finish suitable for all types of site applied coatings. Being manufactured from Versapanel they are totally asbestos and toxic free, with the additional qualities of long term durability and maintenance free performance.

Typical Application Details





EV17

Surface Treatments to Versapanel

ISSUE 1 - APPROVED MARCH 2004

SURFACE TREATMENTS TO VERSAPANEL

Decoration to Verspanel

Versapanel will receive most standard paint finishes and stains, Versapanel has a pH of 11-13 and therefore an alkali resistant primer may be required by some coatings - it is advisable to refer to the paint manufacturer in all instances. Remove any surface dust prior to decoration and ensure that if boards have been exposed to the elements that they have been allowed to dry out and acclimatise before being coated.

For surface treatments that are not vapour or moisture permeable the reverse and all edges of the panel should also be treated in the same way. Uneven joints, screw holes or surface damage can be rectified by use of compatible filler.

Factory Applied Primer/Sealer To Versapanel

Versapanel can be supplied with a factory applied primer/sealer that will resist up to 80% of possible moisture uptake. It can be applied to both unsanded and sanded material, compatibility of this finish to additional surface treatments should be referred to the finish-coating manufacturer before any application. This finish is standard for the VERSAFLOOR range of flooring and is essential when used in conjunction with ceramic tile installations.

Primer/Sealer Specification

Composition – Acrylic based water reducible coating containing white or grey pigment and fillers.
Application - Suitable for in line application to VERSAPANEL cement board, both faces and all edges. It is applied by computer controlled pressure spray guns.
Properties - The cured film of the primer/sealer has excellent adhesion to the substrate and reduces the swelling and shrinkage of the panel by controlling any moisture uptake.

Extensive test have been carried out with various adhesive manufacturers but in all instances surface compatibility should be carried before any further application is made by either adhesive or paint.

Appearance - Opaque white or grey

Viscosity - 30 – 35 sec. Din 4mm cup

Density - ca 1.33

Drying - After coating panels run through an extractor zone so that moisture is taken form the application to aid curing and level the surface . Panels then pass under infra red dry zones to harden the surface.

Storage - Product should always be stored away from direct sunlight and direct heat sources at temperatures preferably below 25c.

Factory Applied Surface Coating - Pre Decorated Versapanel

Versapanel offer to the market a unique opportunity with a pre-decorated finish.
The surface treatment is factory applied to both faces and all edges by an automated process using high performance water based acrylic paint.
This product has been formulated to give a high performance finish to Versapanel, which has excellent weathering performances with good surface hardness.
The colour range is based on the RAL colour list and seven basic colours can be offered.
Full product description with supporting technical information can be supplied upon request.